STATISTICAL BULLETIN

Metropolitan Life Insurance Co.

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TYPHOID FEVER DEATH RATE AGAIN RISING.

What is the significance of the remarkable increase in the number of deaths from typhoid fever during the months of August and September of this year? The first six months of the year closed without any indication of a check in the rate of decline for this cause of death. The figures for Metropolitan Industrial policyholders for the period January to June showed that there had been a decline of 14 per cent. in the typhoid fever death rate among white persons, and 15 per cent. among colored persons, as compared with the rate for the first six months of last year. But, the number of deaths during the third quarter of 1921 has been so large that at the present writing, the typhoid fever death rate for this year, to date, equals that of last year and is still rising. Unless there is a change in the present situation, the year 1921 will close with a higher death rate for typhoid fever than did 1920.

From various parts of the country come reports showing that we are right now experiencing numerous local epidemics of typhoid fever. There has been unusual prevalence of the disease in the states of New Jersey, Illinois, Pennsylvania, Ohio, New York, North Carolina, Maryland, Georgia, Indiana, Alabama, Kentucky and Kansas.

The facts for the last few months indicate that there has been a slackening in the control of this disease. This does not necessarily mean that we shall go back to periods of high typhoid fever death rates. With our present-day knowledge of the causes and means of control of typhoid fever, we shall probably never again suffer from the high rates of ten years ago. Nevertheless, the check in the decline of the death rate is a source of great disappointment and suggests further inquiry as to what is at the bottom of the change. Is it necessary in certain states and cities for the health

departments to tighten up their control of the sources and distribution of their milk supplies? Has there been any let-down in the sanitation and supervision of water supplies? Are the precautions against carriers as rigidly carried out as they have been in the past? Is the good effect of war-time inoculation against the disease wearing off? Is the distribution of anti-typhoid literature as general or as effective as heretofore? Are markets and other places where food is handled, inspected with as much care as formerly?

These are some of the questions which health officers and sanitarians must ask, in view of the recent increase in the typhoid fever death rate. We have, with good reason, begun to look upon typhoid fever as a vanishing disease. It is obvious that there is still much work to be done, unless we are willing to continue in the unsatisfactory condition of either a stationary or a rising death rate from typhoid fever.

MORTALITY EXPERIENCE FIRST NINE MONTHS OF 1921.

The health record of 1921, to date, makes it highly probable that the death rate for the whole year will be considerably lower than that for 1920. During the first nine months, the recorded mortality was 18.1 per cent. lower than in the corresponding period of 1920. Whether this figure will hold for the entire year depends upon the developments in the mortality situation of the closing three months.

Broadly speaking, the favorable health record of the year has been brought about by a continuation of the drop in the death rate of three or four major conditions. The influenza and pneumonia rates have been lower during the first nine months of this year than during any of the preceding ten years. Tuberculosis, organic diseases of the heart, nephritis, cerebral hemorrhage, Bright's disease, and accidents, have shown distinctly lower death rates this year than last. Mortality from accidents of pregnancy has been decidedly lower this year.

Unfavorable Elements in the 1921 Health Record.

Unfavorable tendencies were observed, however, for a number of causes of death in the preventable group. In another section of this *Bulletin* we have gone into considerable detail with respect to the unsatisfactory typhoid fever situation.

Diphtheria.

Diphtheria, especially, is prevalent. The diphtheria death rate of this year has been higher than during the corresponding period of

1920. The experience of the last three months of this year is likely to add considerably to the totals for this disease. The high diphtheria death rates of the last few years have not gone unnoticed by the public health officers of the United States and Canada. With the exception of a few of the larger cities, however, very little really effective effort has been made to reduce mortality from this readily preventable disease. In the first nine months of the year, nearly 2,100 children in the Industrial Department of this Company died from diphtheria. How many more survived an attack of this disease and were left with badly impaired hearts or other sequelæ of this disease is not known. But the total must be large. One thing is certain. Before the diphtheria death rate can ever reach a figure within reason, the public health movement of the United States and Canada will have to arouse public interest in the prevalence of this disease and in the measures for its control. The public press, women's clubs, the clergy, and all other agencies for arousing public opinion should direct attention to the needless slaughter of child life which arises because communities are not using all of the facilities at hand for the prevention of diphtheria. The public health and medical profession has the means of protecting children against the disease. Every health officer, every school superintendent, and every other public official in contact with the child population has it in his power to lessen the vast number of children who annually become sick with the disease, and a great many of whom succumb. The fact that many thousands of children die needlessly each year in the United States from diphtheria should be emphasized and re-emphasized until every available facility for diphtheria control is in full operation and continues in operation. Schick testing and the administration of toxin-antitoxin to susceptibles offers the solution to the problem of diphtheria control. The prevailing mortality figures for diphtheria are a standing reproach to the intelligence of mankind. This disease, like typhoid fever, should enjoy no toleration.

Scarlet fever.

This year, the scarlet fever death rate has also been rising. We may well ask, in view of the rise this year and in the two preceding years, if the drop in the scarlet fever rate between 1911 and 1918 was only indicative of periodic fluctuations of this disease, or if it may be ascribed to the work of the public health and allied movements? The rise of the scarlet fever rate in the past three years seems to support the former assumption more strongly than the

latter. It is really a question whether we have made any progress on a nationwide scale in the prevention of scarlet fever morbidity and in the reduction of case fatality. A more detailed note on scarlet fever is presented in another section of this *Bulletin.*

Puerperal sepsis.

With respect to puerperal septicemia, the death rate this year is about holding its own in comparison with the mortality figures of the first nine months of 1920. Dividing the data by color, we find a slightly increased death rate for white lives and a slightly decreased rate for the colored group. Compared with 1919, the death rate for puerperal sepsis among white lives in the Industrial Department was 44 per cent. higher this year. As we indicated in our August *Bulletin,* this situation calls for the close attention of obstetricians and health officers to the conditions giving rise to infection in the puerperal state.

Accidental drowning.

There has been an increase this year, also, in the mortality from accidental drowning. During the first nine months of 1921, the death rate was nearly 10 per 100,000. It would seem that in the prevention of mortality from this cause, there is room for a wider development of such activities, as the American Red Cross Life Saving Service, and of similar efforts directed at the prevention of drowning in vacation resorts, and in those centers where there is commercial waterfront activity.

Automobile accidents.

Another bad spot in the accident mortality experience of this year is the high death rate from automobile accidents. The problem of preventing automobile accidents and injuries is practically entirely within the province of state licensing agencies, and of municipal and rural police organizations. There seems to be a consensus of opinion among students of this particular subject, that not very great progress will be made in the suppression of automobile accidents and injuries until drivers of motor cars are made to realize more thoroughly their personal responsibility for the reasonable and cautious use of public highways.

Following the recent change in employment conditions in the United States, there has been a sharp rise in the suicide death rate.

The following table presents the mortality data of the first nine months of 1921, 1920 and 1919 for white and colored lives in the Industrial Department of this Company.

Death Rates per 100,000 Persons Exposed. First Nine Months of 1919, 1920 and 1921, Compared By Color, for Principal Causes of Death. Industrial Department, Metropolitan Life Insurance Company, Premium Paying Business.

Cause of Death	Death Rate per 100,000 Persons Exposed					
	White			Colored		
	Jan.-Sep. 1921	Jan.-Sep. 1920	Jan.-Sep. 1919	Jan.-Sep. 1921	Jan.-Sep. 1920	Jan.-Sep. 1919
All Causes of Death	799.9	981.3	1051.8	1322.1	1577.0	1656.9
Typhoid fever	5.3	5.4	5.9	12.1	11.1	13.3
Measles	4.1	11.2	4.0	1.9	4.6	2.4
Scarlet fever	8.1	6.4	4.1	2.6	.7	.3
Whooping cough	4.2	7.1	3.3	7.5	8.8	3.0
Diphtheria and croup	22.7	21.3	18.8	5.4	5.3	5.8
Influenza	7.9	65.0	120.3	18.3	104.4	152.6
Tuberculosis all forms	99.3	124.9	138.0	272.3	305.0	329.4
Tuberculosis of lungs	88.7	112.1	124.4	248.2	279.0	298.8
Tuberculous meningitis	5.0	6.5	7.0	6.4	6.5	10.3
Other forms of tuberculosis	5.5	6.3	6.6	17.7	19.4	20.4
Meningitis—total	5.2	6.3	7.4	5.0	7.5	5.2
Cerebrospinal meningitis	3.0	5.3	5.9	3.2	6.4	4.7
Cerebral hemorrhage; apoplexy	55.7	58.2	54.9	86.4	88.3	87.4
Organic diseases of heart	106.9	115.1	107.7	168.0	179.7	180.8
Total respiratory diseases	77.3	135.4	146.2	126.1	222.0	235.1
Bronchitis	5.2	8.9	8.5	10.4	12.5	11.7
Bronchopneumonia	23.5	39.7	39.4	31.3	47.4	49.1
Pneumonia-lobar and undefined	40.8	76.2	89.7	72.7	147.4	159.5
Other diseases of respiratory system	7.9	10.6	8.6	11.6	14.6	14.8
Diarrhea and enteritis	15.6	15.9	16.6	14.9	15.1	19.6
Under 2 yrs.	6.4	7.3	7.8	3.8	4.9	6.5
2 yrs. and over	9.1	8.6	8.8	11.1	10.2	13.1
Nephritis and Bright's disease	66.4	74.1	73.9	123.5	132.1	136.3
Total puerperal state	19.1	23.7	19.8	27.1	31.2	25.1
Puerperal septicemia	8.5	8.1	5.9	11.6	13.1	11.5
Puerperal albuminuria and convulsions	4.4	4.9	4.5	7.6	7.1	5.0
Other dis. of puerperal state	6.2	10.6	9.4	7.8	11.0	8.7
Total external causes*	68.1	69.4	97.5	97.4	93.4	116.4
Suicides	7.8	6.3	7.5	5.3	3.8	5.0
Homicides	3.4	3.3	3.7	27.2	23.4	32.1
Accidental and unspecified violence†	56.7	59.3	63.2	64.9	65.9	69.2
Accidental drowning	9.6	7.4	§	11.1	10.0	§
Automobile accidents	11.6	10.6	§	8.3	6.0	§
War deaths	.1	.6	23.1	.1	.4	10.2
All other and ill-defined causes of death	233.9	242.0	233.4	353.7	367.7	344.3

* Includes "war deaths." † Excludes "war deaths." § Data unavailable.

SCARLET FEVER DEATH RATE HIGHEST SINCE 1914.

Among the unfavorable developments in the public health situation during the first nine months of 1921 has been the high death rate from scarlet fever. Unless there is a pronounced change for the better during the remainder of the year, the death rate for this disease will be higher among children in the Industrial Department of this Company than for any year since 1914. Unfortunately, we cannot expect betterment in the situation for the remaining months of this year, because the fall and early winter are months of heavy mortality from this disease.

The scarlet fever death rate has been rising rapidly each year since 1918. For the first nine months of 1921, the rate was 29.8 per cent. higher than for the corresponding period of 1920.

From year to year, there is, of course, marked variation both in the prevalence rate and in the case fatality rate of scarlet fever. There is no clear evidence from the morbidity or mortality statistics of scarlet fever that public health work has succeeded very decidedly in suppressing case prevalence and in lessening case fatality of the disease. It is possible, of course, to point to the greater amount of school hygiene work and to the increasing effectiveness in certain areas of practical health work in quarantine and release procedure. It is also possible that there have been marked improvements in the medical and nursing treatment of the disease. But little effect of these measures upon the case prevalence and mortality rate can be discerned clearly from the available figures. Considering the situation in a very broad way, it is possible to conclude that perhaps the fall in the scarlet fever prevalence and case fatality rates for ten years preceding 1918, was simply one expression of the periodicity of the disease. It is difficult to determine this, however, from the published statistics. We must consider, also, the relationship of scarlet fever to other diseases, such as measles and influenza, and to the infectivity and virulence of the organisms which sometimes complicate this group of infections. The problem is indeed a difficult one. Further study of the unusual prevalence of scarlet fever during the past three years is called for by the sharp rise in the death rate. It should be determined how much of the increased prevalence is perhaps part of the natural history of scarlet fever and how much of it is due to relaxation in measures for prevention or control.

PREVENTION OF ACUTE RESPIRATORY DISEASE.

Are the upper respiratory infections the necessary foundation upon which is built up later the severe primary pneumonias?

The very great increase of acute respiratory diseases during the war made it possible to collect a large amount of new data which seem to bear upon the question of the interdependence of some of the infections of the respiratory tract. Dr. A. R. DOCHEZ, of the staff of the Presbyterian Hospital, New York City, in a recent letter, has called our attention to the value of solving the problem of the cause of the increase in streptoccoccus pneumonia in recent years. Late in 1917, in the army camps of the United States there occurred important outbreaks of measles. Later, he says, there developed a large number of cases of bronchopneumonia and empyema due to infection with *streptoccoccus hemolyticus*. At first the pneumonia and empyema occurred almost exclusively as secondary infections following an attack of measles. In the course of a few months, however, cases of *primary* streptoccoccus pneumonia appeared in which there had existed no predisposing infection. Soon a considerable proportion of all the cases of pneumonia observed was due to this etiological agent and the distribution over the country was widespread. This leads to a reasonable assumption that streptoccoccus first acted essentially as a *secondary* invader, but that with increasing opportunities to produce disease, the virulence of the organism was heightened and that before long it was able to initiate the disease without the aid of predisposing factors.

Here then we would be dealing with two separate phenomena, first, the increased incidence of a secondary infection in sick individuals and second, the appearance of what might be termed a secondary epidemic which eventually achieved independence of the predisposing factors upon which it was originally based.

The conception of secondary epidemics is somewhat new and it is this phase of the subject and the possibility of the necessary dependence of one epidemic disease upon another that is of interest in regard to the question of acute respiratory disease as we see it every winter. To state the application briefly, there occurs every winter a series of epidemics of very widespread incidence, practically pandemics of infections, variously termed common colds, grip, influenza and tonsillitis. These occur with great regularity and with a certain periodicity.

Dr. DOCHEZ has called attention to two outstanding features: first, that there is lack of a well-defined etiology, and second, that

there is much clinical confusion concerning these types of infectious disease. His studies have led to the conclusion that exclusive of epidemic influenza, there are at least two types of these catarrhal fevers. One of these usually appears in the late summer or early fall and is succeeded in a few months by the other. Later comes the period of maximum incidence of severe infections of the respiratory tract and a somewhat general mixture and confusion of all types of respiratory infection.

The question is, therefore, whether it would not be advisable to shift the attack of the public health forces from lobar pneumonia to the milder basic infections. This seems to be the proper course if we admit that the upper respiratory infections are the necessary foundation for severe primary pneumonias in much the same manner as primary streptoccoccus pneumonia and the secondary pneumonias are related to measles.

UNEMPLOYMENT AND THE HEALTH OF WAGE-WORKERS' FAMILIES.

An interesting study of the possible effect of unemployment upon wage-workers' families has been made by the Instructive District Nursing Association of Boston. Among 4,013 families there were 466 instances where wage-earners were unemployed. In 76 of these families the health of all, and in 249, the health of one or more members, had been affected. One hundred and thirty-one of the families included one or more sick children. In addition to undernourishment, there were found active and arrested tuberculosis, rickets, various skin diseases, digestive disorders and apparently lowered resistance to disease resulting from frequent minor illnesses. Informal advice from a number of other visiting nurse services suggests that perhaps graver conditions than those found in Boston may be discovered in other areas. It is the purpose of this note to suggest that other visiting nursing associations and organizations coming in contact with wage-workers' families take account of the extent of unemployment and that they record their observations of any ill effect upon the health of members of these families.

HEALTH RECORD FOR SEPTEMBER, 1921.

The death rate among insured wage-earners during the month of September continued exceedingly low. It was, however, a trifle higher than that for September of last year. As compared with that for August, 1921, a slight decrease was registered. Low rates con-

tinued to be reported for tuberculosis, heart disease, pneumonia, Bright's disease and the accidental causes.

The outstanding unfavorable development of the month was the increase of 32 per cent. in the death rate for typhoid fever as compared with last month, and of 19 per cent. as compared with the rate of September 1920. Diphtheria also registered a considerable increase. Between August 22 and October 8 of this year, 70 deaths from acute poliomyelitis were reported among the Industrial policyholders of this Company. During the corresponding period of 1920, there were but 26 such deaths. The rate for automobile fatalities rose to 14.1 per 100,000, which is the maximum registered for any month during 1921.

The death rate for the general population of the large cities of the country for September was 10.5 per 1,000. This marks a decline of 0.1 from the August rate and of 0.5 from that for September, 1920. For the third quarter of 1921, the death rate for the general population of these large cities was 10.6 per 1,000, which is slightly lower than that for the corresponding period of 1920.

Typhoid fever has been prevalent in many cities. A discussion of the unfavorable turn in the typhoid fever situation will be found on page 1.

Diphtheria.

For diphtheria, also, high morbidity and mortality is reported from many sections of the country. According to a warning issued by the Toledo Health Department, that city will face a crisis this fall and winter unless conditions improve materially. Toledo has inaugurated an energetic campaign leading to the control of diphtheria. At the Conference of the Ohio Health Commissioners on September 14th it was stated that deaths from diphtheria are being reported to the State Bureau of Vital Statistics in considerable numbers. There have been many cases in Akron, Athens, Nelsonville and Doanville. In Cleveland, immunization of children against diphtheria is to be begun in the public schools. The Health Commissioner of Chicago has appointed a commission to investigate the possibilities of securing adequate control of this disease. The Michigan Department of Health recently completed a study of the effects of active immunization against diphtheria among the children of the Michigan Home and Training School. Syracuse is keeping records of diphtheria cases with respect to milk supplies and other possible sources of disease.

Smallpox.

Smallpox cases have been reported in considerable numbers from California, Montana, Washington, North Carolina and Minnesota. At the recent meeting of the Ohio Health Commissioners, general vaccination was advocated as was also more rigid enforcement of vaccination laws. It is estimated that at least 25,000 children in Cleveland will be immunized this year. Pupils entering school for the first time will be given a reasonable period in which to be vaccinated before compulsion is employed. Public school authorities in Cuyahoga Falls will make vaccination compulsory. In several other Ohio towns and cities, vaccination of all children will be required before they can enter school.

Poliomyelitis.

Poliomyelitis has been reported from many sections of the country, notably New York, and Minnesota. Illinois, Washington, Massachusetts, Wisconsin, California, Maryland, Iowa and Indiana also report prevalence of this disease. The Health Department of Cincinnati issued a warning against a possible epidemic. In New York City more cases were reported during the fourth week of September than during any single week since the epidemic of 1916. Many cases were registered as the result of a canvass of 7,000 homes by nurses of the Health Department.

Pellagra.

Reports of new cases of pellagra in considerable numbers have come from Arkansas, Louisiana and Texas. There were also a few new cases in Maryland, New Mexico, Massachusetts, Kentucky and Georgia.

It has been announced that a fund of $21,000 will be expended in research work in the Bitter Root Valley of Montana in connection with Rocky Mountain spotted fever.

There has been a marked increase in the number of suicides in Detroit during the month and the cause has been attributed to unemployment. Chicago has reported more suicides during the first nine months of the year than during all of 1920. There was also a considerable increase in the number of homicides in that city. Here, also, unemployment and economic conditions are believed to be responsible.

In New York State during September, 213 persons were killed in automobile accidents. Forty-seven deaths from this cause occurred in New York City alone.

The table below displays the mortality among Industrial policyholders for September and August, 1921, and for September, 1920, and for the whole year 1920:

METROPOLITAN LIFE INSURANCE COMPANY.

Death Rates per 100,000 for Principal Causes, Premium-paying Business in Industrial Department.
(Annual Basis)

MONTHS OF AUGUST AND SEPTEMBER, 1921, AND OF SEPTEMBER, 1920.

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED			
	Sept., 1921	Aug., 1921	Sept.,1920	Year 1920
TOTAL—ALL CAUSES	791.6	809.0	782.7	989.4
Typhoid fever	13.6	10.3	11.4	6.7
Measles	.5	1.1	1.4	8.5
Scarlet fever	3.3	3.7	2.0	6.0
Whooping cough	3.6	4.3	5.0	6.6
Diphtheria	17.7	14.3	12.5	22.1
Influenza	2.9	2.5	4.4	53.5
Tuberculosis (all forms)	100.5	113.5	116.1	137.9
Cancer	72.2	72.3	69.3	69.8
Meningitis (all forms)	4.7	6.2	5.6	5.2
Cerebral hemorrhage	52.2	48.0	49.7	61.3
Organic diseases of heart	98.3	100.9	93.9	117.0
Pneumonia (all forms)	32.7	26.8	27.3	106.1
Other respiratory diseases	11.5	9.9	11.8	18.2
Diarrhea and enteritis	24.2	31.3	29.0	15.8
Bright's disease	63.6	60.7	66.2	70.8
Puerperal state	15.9	16.3	16.6	23.0
Suicides	7.9	8.0	5.5	6.1
Homicides	5.8	6.3	8.8	5.8
Other external causes (excluding suicides and homicides)	60.5	70.2	61.4	60.1
Traumatism by automobile	14.1	13.8	14.0	11.1
All other causes	200.2	202.5	184.9	188.9

Correspondence on the subjects discussed in these BULLETINS may be addressed to the Editor:

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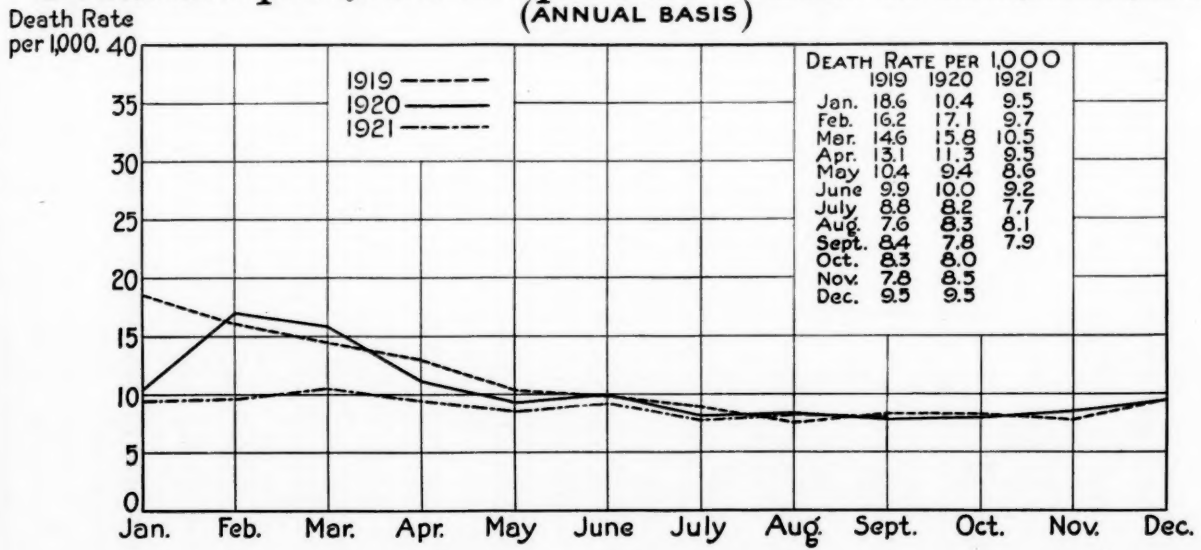
Metropolitan Life Insurance Co.

INDUSTRIAL DEPARTMENT

Death Rate per 1,000 in Specified Months of 1919, 1920, 1921.

(ANNUAL BASIS)



DEATH RATE PER 1,000	1919	1920	1921
Jan.	18.6	10.4	9.5
Feb.	16.2	17.1	9.7
Mar.	14.6	15.8	10.5
Apr.	13.1	11.3	9.5
May	10.4	9.4	8.6
June	9.9	10.0	9.2
July	8.8	8.2	7.7
Aug.	7.6	8.3	8.1
Sept.	8.4	7.8	7.9
Oct.	8.3	8.0	
Nov.	7.8	8.5	
Dec.	9.5	9.5	